See for Yourself

Vision and Older Adults

Presenter's Guidebook

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
National Institutes of Health
National Eye Institute

LIGHTHOUSE INTERNATIONAL

The See for Yourself: **Vision and Older Adults** program is designed to educate adults about changes that affect their eyes as they get older and to motivate them to take an active role in decisions concerning their vision.

The National Eye Institute (NEI) conducts and supports research that leads to sight-saving treatments and plays a key role in reducing visual impairment and blindness. The NEI is part of the National Institutes of Health (NIH), an agency of the U.S. Department of Health and Human Services.

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Special thanks to Chesterfield, Heather, Lou, Frances, and Herb, who appear in the video. They speak out about their vision problems, what can be done, and how they actively sought help. We hope their experiences will encourage others to do the same.

We are grateful to Celeste Holm, who narrated **See for Yourself**, produced by Scott Fraser of Java Street Productions.

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Introduction

Adults often accept vision changes as a natural part of getting older. But changes in vision, at any age, should be evaluated by an eye care professional. A new prescription for eyeglasses, better lighting, or, in some cases, cataract surgery may be all that's needed to help people see better.

When vision changes cannot be fully corrected to the normal range with ordinary eyeglasses, contact lenses, medication, or surgery, the result is permanently impaired vision, or "low vision." Low vision refers to a range of vision capabilities. Too often, people with low vision think that nothing more can be done to help them see better, so it's particularly important that they know what kind of help is available.

Adults who are well informed are more likely to seek out vision rehabilitation services when vision changes begin to affect their ability to perform day-to-day activities. In the video, the people with low vision show what can be done to maintain an active and independent lifestyle.

Who Can Benefit From This Program?

The **See for Yourself** program is an excellent resource for health promotion programs, students in the helping professions, caregivers, and eye care professionals. Since the likelihood of vision impairment increases with age, adults need to know what can be done when vision problems affect the quality of their lives. Health and human service professionals also must be familiar with the help that is available in order to make appropriate referrals.

See for Yourself is designed for various audiences:

- Adults of all ages
- Health and human service providers in the field of aging
- Students of gerontology, social work, nursing, optometry, and ophthalmology
- Adults recently diagnosed with low vision and their family members and friends.

About the Program

The **See for Yourself** program consists of the following:

- Video (English and Spanish; open- and closed-captioned)

  This video features older adults who speak out about their vision problems and how they actively got help. They show how vision rehabilitation helped them continue to be active and independent. Optical and adaptive devices are highlighted, and consumer awareness and empowerment are emphasized.

- Booklet: What You Should Know About Low Vision (English and Spanish versions)

  This booklet provides information on low vision care and other vision rehabilitation services.

- Presenter's Guidebook

  This guidebook offers tips on how to use the video and provides a script for the leader and some questions and answers to use with program participants. The book also provides resource information on many topics, including major eye conditions affecting older people, vision rehabilitation services, and optical and adaptive devices.

Planning Your Program

Leader Preparation

Conducting a successful, stimulating program requires preparation. Familiarize yourself with the video, booklet, and guidebook so you'll be better able to address issues and questions from your audience.

- Preview the video and read the script. Put key words or phrases on index cards or a flip chart for easy reference during the program.

- Read the booklet **What You Should Know About Low Vision**.

- Enlarge page 15 in this guidebook (**Be an Informed Consumer**), and post it on a flip chart or wall.

- Read the section **Some Questions and Suggested Answers** (pages 17-25) and decide how you will use this material. Consider distributing copies to all participants.

- Familiarize yourself with the various topics covered in the section **Resources for the Presenter** starting on page 29 of this guidebook.

- Develop a list of local resources and make it available in large print (16-point type or larger). Contact the organizations listed in the section **How To Get Information and Help** (page 44) in order to find low vision centers, vision rehabilitation agencies, and support groups in your area.

- Contact your local optometric or ophthalmological society or the organizations in the section **How To Get Information and Help** to obtain brochures on various eye conditions and medical/surgical treatments.

- Use a public address system for your program. If you are showing the video to an audience of older adults, it is likely that some people will have a hearing impairment. Most people will not self-identify, so it's best to use microphones during the entire presentation.

- We recommend that the videotape be shown with the captions to accommodate people with hearing impairments. Mention this in your publicity and announce it during the program. Learn how to access the caption feature on your television monitor.

- Arrange for a chalkboard or a flip chart with bold black markers.

- Read the section **Program Enhancements** (page 27) to get ideas for expanding your program or for developing followup programs. This section provides information about using vision simulators that approximate different types of vision loss; it also suggests resources for obtaining speakers.

Implementing Your Program

Note to Leader:
After your welcoming remarks, you can use the script below to introduce the video and conduct the program. It's best to review it in advance, so that you can make any modifications you feel are appropriate for your audience. It is not necessary to have a professional in vision rehabilitation conduct this program. The resource material in the guidebook offers helpful information.

Sample Script

Introduction

"Today's program is about changes that can affect your eyes and vision as you get older. Some changes in vision are normal and can be corrected with a new prescription for eyeglasses, better lighting, or, in some cases, cataract surgery. Sometimes, however, vision changes are caused by eye conditions that can't be corrected fully to the normal range with ordinary glasses, contact lenses, medication, or surgery; the result is permanently impaired or low vision. It's important to know what help is available, and how and where to get it."

"Does anyone here know someone who has a vision problem?"

Note to Leader:
Ask for several volunteers to share information about a vision problem or to ask questions. You can write the information and questions on a flip chart. If you have a vision problem, you may want to share your experiences with the audience. If you know that someone in your audience has a vision problem, ask the person's permission (in advance) and have the person briefly describe the eye condition and its effects on daily activities.

- Then continue as follows:

“Remember, low vision doesn’t mean no vision. Most people with low vision have good usable vision while others have very limited vision. Low vision refers to a wide range of vision capabilities.”

Note to Leader:
If you intend to use vision simulators, this is a good time to introduce them. You also may use them after you show the video. See the section **Program Enhancements** for suggestions on using vision simulators.

- Then introduce the video:

“We’re going to see a video called **See for Yourself**. We’ll meet people with vision problems and hear how they actively got help. It will help you to understand what vision rehabilitation is and how it enables people to continue to be independent. Vision changes are more common as you get older. Even if you don’t have a vision problem yourself, you may know someone who can benefit from this information.”

“After the video, you’ll be able to ask questions, and we’ll suggest additional resources and information.”

Showing the Video

Note to Leader:
The video is about 15 minutes long and can be viewed with or without captions. We recommend showing it with the captions to accommodate people with hearing impairments. Announce this feature to your audience because people may need a few minutes to change or move their seats so that the captions are in their line of sight.

Discussion Following the Video

Note to Leader:
After showing the video, invite the audience to share any comments or ask questions. The following questions may help generate discussion:

- What did you learn from the video?
- What do you want to know more about?
- What information was difficult to understand?

Note to Leader:
People may ask specific medical questions about an eye condition. If this occurs, it's important to tell the group that specific questions are best answered by their eye care professional. You can say the following:

"You're asking very good questions. I can't answer questions about your eye condition but you should talk with your eye care professional about them. You may want to write down your questions and bring them to your next appointment."

Note to Leader:
If you brought brochures and pamphlets on eye diseases, tell the audience to pick them up at the end of the program.

- Then continue:

"I'm going to distribute the booklet, **What You Should Know About Low Vision**, which summarizes information presented in the video. You can take the booklet with you. The back of the booklet includes space to write down questions."

“I’d like to go over some of the key points of today’s program.”

Note to Leader:
If you have enlarged and posted page 15, refer to it during this discussion.

“How many of you have had an eye exam within the last year? [Wait for a show of hands.] Within the last two years? It’s really important to have an eye care professional examine your eyes at least once a year, especially if you are over age 65.”

“What vision changes or warning signs would you want to let your eye care professional know about?”

Note to Leader:
Encourage participants to identify warning signs that they feel are important and write them on a flip chart. Then point out that the warning signs also are listed in the booklet.

“Don’t ignore warning signs or blame your vision problems on age. Also some diseases (such as glaucoma) do not have warning signs until vision is lost.”

“Another thing to be aware of is that different eye conditions have different effects on the way you see. Not all people with low vision have the same problems. Sometimes, people don’t understand why their family member or friend can’t read the oven dial but can move around easily at home. For example, people with macular degeneration may have difficulty reading standard print, but usually can move around fairly well using peripheral (side) vision. People with peripheral vision loss usually have no problem reading, but require specialized training to move around safely in their surroundings.”

Note to Leader:
If you have not already used vision simulators with participants, this is a good time to introduce them.

- Continue:

“Remember, help is available. The people in the video are examples of people who have benefited from vision rehabilitation services.”

“Does anyone have any questions about the type of help they got?”

Note to Leader:
Address questions or refer them to their eye care professional. Keep in mind that some people may not want to share their vision problems in a group setting but may take a handout. Develop a list, in large print, of local resources that provide services to people with low vision. To find out about resources in your area, call your local vision rehabilitation agency or the organizations listed in the **How To Get Information and Help** section.

- Continue:

“I have a list of local resources for anyone interested in knowing where to get help in our area.”

Be an Informed Consumer

- Schedule regular eye examinations
- Know about warning signs of possible eye disease
- Understand how different eye conditions affect the way you see
- Discover what can be done if you have impaired or low vision
- Be aware of how to get information and help.

Concluding the Program

Note to Leader:
At the beginning of the program, you asked participants to describe the vision problems of a person they knew and to share any questions. If you wrote down these descriptions and questions on a flip chart, refer back to them. Were their questions answered by the video or during the discussion? If not, determine whether they can be addressed with the information available in this guidebook; otherwise, refer individuals to their eye care professional.

- Then conclude:

"You can take an active role in decisions concerning your vision. It's important that you know what kind of help is available."

Note to Leader:
Make yourself available at the end of the program to talk to people individually. Many times, participants prefer to ask questions privately rather than in front of a group.

"I'll be available to talk with you privately if you have any additional questions."

Some Questions and Suggested Answers

Note to Leader:
The following questions and answers offer additional information about the material presented in the video. They cover a range of topics and issues that address questions your audience may ask. You also may select questions to stimulate audience involvement or distribute them to participants during the discussion or at the conclusion of the program.

Q: How do normal changes in the aging eye differ from changes caused by specific eye disorders?

A: Changes in the healthy aging eye usually can be corrected with conventional eyeglasses or contact lenses. For instance, presbyopia is a natural result of aging in which the lens begins to lose elasticity, making it harder to focus vision up close for activities such as reading. It happens to almost everyone and begins between the ages of 40 and 50; it can be corrected easily with reading glasses or glasses with bifocal, trifocal, or progressive (no-line) lenses.

When visual problems can't be corrected fully to the normal range with ordinary glasses, contact lenses, medication, or surgery, the result is low vision (also referred to as impaired vision). Usually, low vision is caused by one or more eye diseases, such as diabetic retinopathy, macular degeneration, or glaucoma. Although vision loss may be permanent, there is a great deal that can be done to maximize remaining, usable vision through vision rehabilitation.

Q: How is a low vision exam different from a regular eye exam?

A: In a low vision exam, the emphasis is on evaluating and improving how a person with vision loss performs routine daily tasks. A specialist in low vision conducts a variety of specialized tests. Based on the results, optical devices such as strong reading lenses, high-powered magnifiers, or electronic devices may be prescribed to help people perform many day-to-day activities. While these devices do not restore normal vision, they can help people use the vision they have more effectively.

Q: Why does Herb need so many different magnifying lenses for his specific tasks?

A: Magnifying lenses are available in different strengths and designs and are prescribed for specific visual problems and for specific tasks. That's why Herb needs more than one optical device to help him perform various activities.

For instance, the stronger the magnifying lens, the closer the material must be to the magnifier to bring it into focus. Herb has several pairs of magnifying lenses mounted in spectacle frames. The strong magnifying lenses he uses for writing require him to be very close to the writing pad. His magnifying lenses for viewing photos are weaker (magnify less) so that he can hold the pictures farther away. Each pair of magnifying lenses enables Herb to see best at a different distance. Learning to use these devices correctly and successfully takes training and practice.

Q: How does using a white cane help people with vision loss?

A: People with low vision as well as those who are blind can benefit from using a white cane. While people with low vision may have sufficient vision to travel safely without a cane, it does alert others, like drivers or other pedestrians, that the person has a visual impairment. The white cane can also offer additional safety for travel by helping the person detect obstacles such as curbs or steps. Learning to use a cane safely and confidently requires training from a certified orientation and mobility specialist and practice.

Q: Lou uses amber sunglasses. How do you decide which sunglasses are best for your vision?

A: Sunglasses filter out harmful ultraviolet light and may reduce glare and/or enhance contrast both indoors and outdoors. An eye care professional should evaluate which type of filter is best for you. For instance, a person with a cataract might benefit from a gray filter or whichever tint best reduces glare or improves contrast. Various eye conditions respond differently to different tints and filters.

Q: Why do eye conditions such as cataract, macular degeneration, glaucoma, or diabetic retinopathy have a different effect on the way you see?

A: Each eye condition affects a different part of the eye, causing different types of visual problems. A cataract, which is a clouding of the lens of the eye, causes hazy vision, difficulty distinguishing colors, and increased sensitivity to glare.

Macular degeneration is a deterioration of the macula, at the center of the retina, which is responsible for detail, color, and daylight vision. Reading becomes difficult, and there is an increased need for light.

Glaucoma is caused by progressive damage to the optic nerve, usually resulting from a buildup of fluid pressure inside the eye. In its early stages, glaucoma causes a subtle loss of contrast between objects and their background, making it difficult, for example, to distinguish a curb from a sidewalk.

Diabetic retinopathy is the only disease that affects the lens of the eye, the macula, and retina. While the effects of diabetic retinopathy vary, near vision can be distorted, and parts of the visual field may be blurred or obstructed.

Q: In the video, what makes Herb move his head and eyes upward and to the right when he is talking?

A: Since Herb has macular degeneration affecting his central vision, he uses his peripheral vision to see things that are straight ahead. He moves his head and eyes up and to the right in order to get the best view of the person standing directly in front of him. For others with macular degeneration, a different eye position may be better. This is called eccentric viewing.

Q: How does a support group help Lou deal with his vision loss? What feelings do people experience when they discover they have low vision?

A: Sharing feelings, experiences, ideas, and solutions with others in the same situation helps people like Lou cope with everyday issues.

When people find out they have low vision, they may experience a variety of feelings, such as anger, denial, despair, and frustration. The extent of these feelings varies depending on the degree of vision loss and how it affects a person's ability to do the things he/she normally does. Often, people with vision loss are most concerned and fearful of losing their independence and privacy.

Q: Are there activities that a person with low vision may not be able to do?

A: Visual impairment need not prevent people from continuing to work, do daily tasks, or participate in leisure activities. Vision rehabilitation can help people maximize existing vision and learn techniques to accomplish their goals. For example, optical devices such as high-powered magnifiers or electronic devices (computers and closed-circuit televisions) may help someone with low vision continue many activities, such as reading, writing letters, or handling finances. Other vision rehabilitation services enable people with vision loss to learn new ways to cook safely, manage medications, continue hobbies, and more.

While Herb and others with low vision usually cannot continue to drive, they can learn to move around safely indoors and outdoors, using existing vision, auditory cues, and/or other techniques (sighted guide, white cane, or dog guide). Crossing streets and riding public transportation all are possible when the proper techniques are used.

Q: What keeps people with vision problems from getting help?

A: Many people accept vision impairment as part of getting older and assume they have to live with it. Others feel their vision problem is a stigma and withdraw from activities that are difficult to do. Some people may fear that if they tell their family members, they will lose their independence. As a result, they may isolate themselves and try to adapt on their own.

Sometimes people are put off by the term “low vision” and hesitate before going to an agency that has low vision services. People often associate low vision with becoming blind, which is one of the most feared of all disabilities. Since the word “blind” may appear in the name of agencies that offer vision rehabilitation, people may avoid getting help.

It’s important for health and human service professionals to be familiar with the benefits of vision rehabilitation so that they can refer people and encourage them to follow through.

Q: How do you decide whether or not to have cataract surgery?

A: The most appropriate time for cataract surgery depends partly on its impact on daily activities, bothersome symptoms, and maturity of the lens. When a cataract is diagnosed, it is especially important to have your eye care professional monitor its progression. For example, surgery should be performed if the lens is hardening and becoming more difficult to remove. Otherwise, unless a cataract interferes with work, driving, reading, or leisure activities, there is usually no urgent need to remove it. In many cases, vision changes resulting from a cataract can be helped with a new distance prescription, stronger reading glasses, better lighting, magnifiers, binoculars, and wrap-around or clip-on sunglasses. When these options no longer improve vision, then surgery is the only option. There is no medicine or other treatment that can dissolve or remove the cataract.

Program Enhancements

This program can be used with the sample script or it can be enhanced to incorporate the use of vision simulators and/or speakers. In some organizations, this program may stimulate enough interest to develop a series of programs on the topic of vision rehabilitation. Below are some ideas for enhancements or followup programs:

- Vision simulators, which approximate different types of vision loss, can be used before or after the video is shown. When people experience what it might be like to have different visual problems, they gain a better understanding of the impact of vision loss on everyday activities. It is important for you to try out the simulators in advance and to become familiar with how to instruct participants to use them correctly.

- Contact your local optometric or ophthalmological society to invite a speaker who can discuss specific eye conditions and treatment options.

- Contact your local vision rehabilitation agency to invite a staff member who can demonstrate the use of optical and adaptive devices. After seeing the devices in the video, people enjoy trying them out and seeing how they work. At the same time, the staff member can answer specific questions about vision rehabilitation services (low vision care, rehabilitation teaching, orientation and mobility training, and counseling/support groups) and how and where to get them.

- Invite people with low vision to talk about vision rehabilitation and how they use what they learned in their daily activities. There are many support groups for older people with low vision around the country, with members who may be very interested in educating the public about low vision. Meet with the person, in advance, so you can preview the video together and plan how to best address the interests and needs of your audience.

Resources for the Presenter

What Is Vision Rehabilitation?

Vision rehabilitation is the umbrella term for the specialized training and counseling services that help people with vision loss develop the skills and strategies needed to accomplish their goals in all stages of life. While vision rehabilitation cannot restore normal vision, it can help people maximize their existing vision and equip them with devices and techniques to maintain an independent lifestyle. With the help of vision rehabilitation, people can cope with vision loss, take care of their homes, travel safely, accomplish their career objectives, and enjoy leisure activities.

Vision rehabilitation services include the following:

Low vision care

Most people with age-related vision loss do not become totally blind — they still have some usable vision. As a result, they may benefit from a specialized examination provided by eye care professionals trained in providing low vision care. These specialists assess a person's usable vision and prescribe optical and/or electronic devices to help him/her perform everyday tasks. The choice of devices recommended by the eye care professional depends on the activity and the person's existing vision. Instruction is essential to ensure that devices are used effectively and successfully. While optical devices don't restore normal vision, they help people make the most of their remaining vision.

Orientation and mobility training

Orientation and mobility training helps people with vision loss learn the skills they need to travel using existing vision, auditory cues, and/or other techniques such as using a sighted guide, white cane, or dog guide. With this specialized training conducted by certified orientation and mobility professionals, people with vision loss can learn how to develop an awareness of themselves in relationship to their surroundings and to move around and travel safely, comfortably, and independently, both indoors and outdoors. For example, people with vision problems often can shop safely, visit friends, keep medical appointments, and travel on their own. Detecting curbs, crossing streets, riding public transportation, and getting into and out of cars safely all are possible when the correct techniques are used. Training also reinforces the proper use of certain optical devices, such as a telescope for reading street signs.

Rehabilitation teaching

Certified rehabilitation teachers help people with vision loss learn techniques to remain independent at home, at work, and in the community. People are taught to use the vision they have, other senses, special techniques, task lighting, and adaptive and optical devices. For example, they can learn safe, new ways of accomplishing many essential tasks such as preparing food, operating a microwave, grooming, and organizing and labeling medications, as well as modifications for continuing leisure activities and special hobbies. There are many adaptations to everyday items such as using large-print or talking products, as well as adding tactile markings and enhancing color contrast to better distinguish objects in their surroundings. This training can make it easier for people with vision loss to live independently.

Counseling and support groups

Individual or group counseling, an important part of the rehabilitation process, is conducted by trained social workers or psychologists to help people and their families cope with the depression and frustration that may accompany serious vision loss. Support groups (either member or professionally led) are very helpful because they offer people with vision loss, as well as family members, an opportunity to meet others in similar situations and share feelings and experiences, exchange ideas, and develop solutions to everyday issues. These groups can meet in person, by conference call or online (on the Internet).

Career services

Career counselors can help people retain their jobs or find new employment following vision loss. Services may include job counseling, workplace modifications, advocacy, job search strategies, or training in the use of adaptive technology such as large-print, braille, or “talking” computers.

What Are Optical Devices?

Optical devices are magnifying lenses or devices that can help people with low vision continue to function in their day-to-day activities. These devices include spectacles, hand-held magnifiers, stand magnifiers, telescopes, and electronic devices. Sunglasses or tinted lenses also are in this category. Most optical devices magnify or enlarge, and are available in different strengths and designs. After a low vision examination, an eye care professional determines the strength and design to prescribe based upon the activity being performed and the person’s visual function. Optical devices don’t restore normal vision, but they may help people use their remaining vision more effectively. These devices may be difficult to use and usually require instruction and practice to learn to use them correctly and successfully.

There are various types of optical devices including the following:

- **Magnifying spectacles —** magnifying lenses mounted in an eyeglass frame that enlarge the image for the viewer. They are available in different strengths and designs and may be for one eye or both eyes. The stronger the lens, the closer the material must be held to the spectacle in order to bring it into focus.

- **Hand magnifier —** a magnifying lens set in a frame with a handle that makes it easy to carry and convenient to hold for reading labels and mail. It may come with a battery-powered, built-in light source. A hand-held device allows the lens and material to be held farther away from the user's eyes, which may be more comfortable. However, the user needs a steady hand to hold the magnifier at a specific distance from the material being viewed. Some hand magnifiers are small enough to put in a pocket; hence the name "pocket magnifier."

- **Stand magnifier —** a magnifying lens mounted in a stand that rests on a page. The distance from the lens to the material is preset by the design of the stand magnifier. The person moves the stand magnifier across the page without concern about how far to hold the lens from the page. Some are available with an electric or battery-powered, built-in light source.

- **Telescope —** lens systems consisting of a series of lenses, prisms, and/or mirrors that make objects appear closer. Telescopes, which may be used for one eye or both eyes, are similar to opera glasses or binoculars. They may be hand held or mounted in eyeglass frames. Telescopes help a person see things from a distance.

- **Light-absorbing lenses (sunglasses) —** lenses that block or absorb harmful ultraviolet (UV) light and may reduce glare and/or enhance contrast. These lenses can be mounted in spectacle frames or worn over regular glasses in a wrap-around design. They are available with varying degrees of light transmission and tint and may be helpful indoors and outdoors.

- **Electronic devices —** magnification also can be achieved through a variety of electronic devices, which either enlarge or enhance the image and project it onto a screen or monitor. Some examples of electronic devices include closed-circuit televisions (CCTVs) as well as computer systems that convert text into large-print format, synthesized voice, or braille. Some electronic systems are portable and may include hand-held cameras or displays fitted into glasses or goggles, enabling people to carry and use them easily.

What Are Adaptive Devices?

Adaptive devices or products include equipment recommended by vision rehabilitation professionals to help people accomplish many everyday tasks such as writing, organizing clothing, or identifying money. Some equipment is designed primarily for people with low vision such as check-writing guides and liquid level indicators. Other items such as talking clocks and watches feature modifications that make them more useful to people with vision loss. There also are many products that are sold to the general public that can help people with low vision. For example, bold-tip pens create a thick, black line that improves contrast, making it easier for a person to sign a check or prepare a shopping list. Adjustable arm lamps allow light to be positioned directly on a task. Many of these items may be purchased through special product catalogs for people with low vision. Examples of adaptive devices are shown in the video and explained below.

- **Bold-tip pen with black ink —** wide-tip pen that makes a thick, dark, black line

- **Check-writing guide —** nonreflective black plastic template for filling in information on a standard check; also available in a deluxe format that is bound with a plastic backing, holding the check securely in place; guides for signature, stationery, and envelopes also are available

- **Liquid level indicator —** unit consisting of a battery with two prongs that fit over the edge of a glass or cup; a buzzer or beep indicates when the cup is full

- **Locking lid pot —** stainless steel pot that features a lid, with holes, that locks into place for easy and safe draining of cooking liquids

- **VOXCOM II labeling system —** one of several available audio message and labeling systems; a portable unit for recording and playing back short messages on reusable cards; operates with one button and is useful for creating labels to organize food, clothing, or other items used on a daily basis

- **Large-print playing cards —** regular or pinochle decks of standard size cards available in 16-point type size to jumbo size print, with or without pictures; playing cards with braille notations also are available

- **Large-print cookbooks —** recipes in 18- to 24-point type size

- **Large-print phones —** phones with push-button keys featuring large, contrasting numbers; some models offer white numbers on a black background or black numbers on a white background

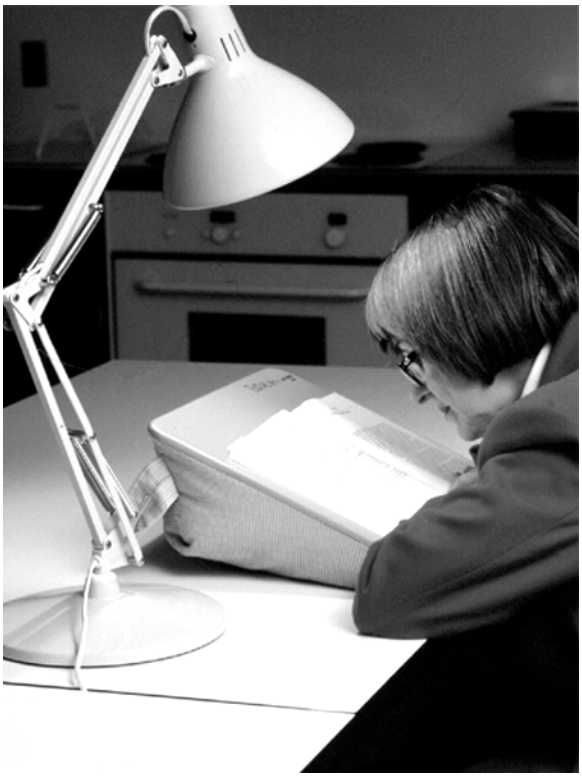
- **Talking watches and clocks —** various models and sizes are available, including some with large numeral displays; the talking feature is usually activated by the push of a button and is available in several languages

- **Large wall clocks —** enlarged clocks with extra large numbers; available with hands and numbers in black against a white background or the reverse

- **Large-print address book —** an address book with oversized writing spaces and bold lines to provide ample room for writing with a bold-tip pen

- **Marking and labeling materials —** common household items, like nail polish or cork/felt dots as well as commercial labeling products such as tubes of plastic paste, that can be applied directly onto paper, plastic, wood, or metal to make raised dots or lines for marking telephones, oven dials, or any object for quick identification

- **Lap desk —** smooth, inclined surface atop a lightweight, soft “bean bag” base that can be used as a writing surface or to support a book; enables a person to bring materials closer while maintaining good posture



- **National Library Service four-track cassette player —** a playback device and specially recorded four-track cassettes are available on loan from the National Library Service for Blind and Physically Handicapped for people who are unable to read standard print because of low vision or physical disabilities; although this machine also plays standard audiotapes, commercial tape recorders do not play four-track cassettes unless they have been specifically adapted for this purpose

- **Task lighting —** desk or floor lamps with correct wattage bulbs and adjustable arms to help focus light directly onto the task and reduce glare; some lamps incorporate illuminated magnifiers

Who Are Eye Care Professionals?

Ophthalmologist (MD): A medical doctor who diagnoses and treats all diseases and disorders of the eye, performs surgery, and can prescribe glasses and contact lenses

Optometrist (OD): A primary eye care provider who prescribes glasses and contact lenses, and diagnoses and treats certain conditions and diseases of the eye

NOTE: Low vision is a subspecialty of both ophthalmology and optometry, and not all eye care professionals are trained in this area.

Who Are Vision Rehabilitation Professionals?

Vision rehabilitation professionals are uniquely trained and nationally certified to provide training and counseling to people along the entire continuum of vision loss, from low vision to blindness. They help people with vision loss learn the skills and techniques needed to maximize independence and ensure safety. They include:

- **Specialists in low vision:** Ophthalmologists or optometrists who have had training in providing low vision care. These specialists can assess people's usable vision; prescribe optical, electronic, and adaptive devices; and recommend lighting strategies for people with low vision.

- **Orientation and mobility specialists:** Professionals who instruct people with vision loss to travel independently and safely. They teach people how to use residual vision, with or without prescribed low vision devices, as well as auditory cues for safe movement; sighted guide and protective techniques; and a white cane or dog guide.

- **Rehabilitation teachers:** Professionals who are specially trained to provide assessment, planning, instruction, and information in the various areas of independent living and communications. They recommend adaptive devices that can help people with vision loss carry out daily tasks and function to the best of their ability.

- **Low vision therapists:** Professionals who help people learn to use their vision more efficiently, both with and without prescribed optical devices. They may work with optometrists and ophthalmologists who provide low vision care as well as provide followup training to people in their homes or workplace.

- **Paraprofessionals:** Rehabilitation Teaching Assistants (RTAs), Orientation and Mobility Assistants (OMAs), and multiskilled Vision Rehabilitation Assistants (VRAs) may assist the vision rehabilitation professional by reinforcing skills in activities of daily living and use of prescribed low vision devices. Assistants work under the supervision of the vision rehabilitation professional.

What Are Normal Changes in the Healthy Aging Eye?

Presbyopia is the most common age-related vision change and happens to almost everyone beginning between the ages of 40 and 50. A natural result of aging, the lens begins to lose elasticity, making it harder to focus vision up close for activities such as reading. Presbyopia can be corrected easily with reading glasses or glasses with bifocal, trifocal, or progressive ("no-line") lenses.

Adaptation to changes in lighting slows with age. It may take your eyes a longer time to adjust to changing levels of illumination such as going from daylight to a dark theater or dimly lit restaurant.

Contrast sensitivity, the ability to perceive differences between objects and their background, decreases with age as the lens of the eye becomes increasingly dense and more yellow. For example, it may become difficult to tell where an object ends and its background begins, making it hard to see curbs and steps. And color perception can be affected as well. The color blue may appear darker and harder to distinguish from black.

Miosis is the gradual constriction of the pupil, resulting in less light entering the eye. As the eye ages, the pupil gets smaller, resulting in the need for more light to see well.

What Are the Three Types of Functional Vision Loss?

Central vision loss is caused most often by macular degeneration. People have difficulty distinguishing facial features, recognizing faces, or watching television. When reading, parts of letters may appear to be missing. Color vision also may be reduced, making it difficult to match socks or to see family photographs.

Overall blur can be caused by cataracts, corneal scars, or diabetes. People may experience clouding of images, increased sensitivity to light (glare), and decreased contrast. Colors may appear faded or changed in hue. Bright lights usually make vision worse. Sunglasses can reduce glare.

Peripheral (side) vision loss can be caused by glaucoma, stroke, or retinitis pigmentosa. People may experience difficulty moving around safely in their environment because of a narrowed field of vision and reduced night vision. They may miss steps and curbs, bump into things, and have difficulty reading.

Common Causes of Age-Related Vision Loss

A **cataract** is a clouding of the normally clear and transparent lens of the eye that produces an overall haze, loss of contrast, trouble distinguishing colors, and increased sensitivity to glare. It can be removed in a short surgical procedure in which the affected lens is replaced with a plastic one. In an otherwise healthy eye, cataract surgery with a lens implant can restore vision to its former clarity. The most appropriate time for cataract surgery depends partly on its impact on daily activities, bothersome symptoms, and maturity of the lens. Cataract surgery has a high success rate in normal eyes. After surgery, individuals may need to change their prescriptions for eyeglasses.

Diabetic retinopathy is one of the complications of advanced or long-term diabetes. It is caused by leaking blood vessels that damage the entire retina, including the macula. While the effects of diabetic retinopathy vary, near vision can be distorted, and parts of the visual field may be blurred or obstructed. In the early states of retinal bleeding, laser treatment can seal leaking vessels. Early treatment may prevent the more severe complications of late-stage retinopathy, such as hemorrhage and scar formation that can result in a detached retina. To reduce the risk of vision loss due to diabetic retinopathy, people with diabetes should have a comprehensive dilated eye exam at least once a year.

Glaucoma is caused by progressive damage to the optic nerve, usually resulting from a buildup of fluid pressure inside the eye. People may not realize that their field of vision is decreasing because there are no obvious early symptoms of the disease and it progresses slowly. Routine eye examinations and special tests of the visual field are key to detecting glaucoma at an early stage.

Early on, glaucoma causes a subtle loss of contrast between objects and their backgrounds, such as not being able to distinguish the curb from the sidewalk. When glaucoma progresses, the optic nerve damage causes an irreversible loss of peripheral (side) vision. Because the condition can be hereditary, people with a family history are at a higher risk, as are all older adults, African Americans, and Hispanic/Latino Americans.

As a rule, elevated eye pressure can be managed with eye drops, laser treatment, or surgery. If detected early, eye drops usually are prescribed to control the pressure and prevent peripheral vision loss from advancing glaucoma. Treatment options for glaucoma are always evolving, which is another reason to visit your eye care professional regularly.

Macular degeneration is the leading cause of vision impairment in the older U.S. population. Macular degeneration occurs when the macula — the central part of the retina, which is responsible for detail, color, and daylight vision — is damaged. When central vision becomes blurred and distorted, reading becomes difficult, color vision is diminished, and there is an increased need for light.

There are two types of macular degeneration: dry and wet. The dry variety, which affects 90 percent of those with the condition, progresses slowly. When reading, parts of letters may appear to be missing, and straight lines may appear crooked or wavy. About 10 percent of people with age-related macular degeneration develop the wet type, which can come on very suddenly because of leaking blood vessels that have grown in, or under, the retina. This causes severe vision loss, and a large dark spot appearing in the center of vision is typical.

Although there is no cure for macular degeneration, an evolving treatment — photodynamic therapy — may slow the progression of wet macular degeneration. Photodynamic therapy uses a special intravenous dye with a laser to seal leaking blood vessels, and several treatments per year may be necessary.

The National Eye Institute's Age-Related Eye Disease Study also showed promising results for patients in the intermediate stage of macular degeneration who took specified doses of antioxidant vitamins and zinc; they lowered the risk of developing more advanced stages of the disease by approximately 25 percent. The formula is now on the market, but it is important to check with your eye care professional to see if it's recommended in your situation.

How To Get Information and Help

The following organizations can provide information and materials for your program:

Lighthouse International
111 East 59th Street
New York, NY 10022-1202
Tel: (212) 821-9200
(800) 829-0500
TTY: (212) 821-9713
E-mail: info@lighthouse.org
Website: www.lighthouse.org

Lighthouse International is a leading resource worldwide on vision impairment and vision rehabilitation. Through its work in vision rehabilitation services, education, research, prevention, and advocacy, the Lighthouse enables people of all ages who are blind or have partial sight to lead independent and productive lives. Its toll-free Information & Resource Service provides information about eye diseases as well as national and international vision rehabilitation services, support groups, and other resources for people with low vision and for their support networks.

National Eye Institute, National Institutes of Health
2020 Vision Place
Bethesda, MD 20892-3655
Tel: (301) 496-5248
E-mail: 2020@nei.nih.gov
Website: www.nei.nih.gov

The National Eye Institute (NEI) conducts and supports research that leads to sight-saving treatments and plays a key role in reducing visual impairment and blindness. The NEI is part of the National Institutes of Health (NIH), an agency of the U.S. Department of Health and Human Services.

Through its Office of Communication, Health Education and Public Liaison, the NEI responds to requests from both professional and lay audiences. The office provides information, distributes publications, and provides referrals to clinical trials and to other organizations and agencies, when appropriate.

American Academy of Ophthalmology
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Tel: (415) 561-8500
Website: www.aao.org

The mission of the American Academy of Ophthalmology (AAO) is to advance the lifelong learning and professional interests of ophthalmologists (Eye M.D.s) to ensure that the public can obtain the best possible eye care. The AAO is an association of Eye M.D.s dedicated to enhancing the quality of life for every person they treat. Eye M.D.s help people see their best by protecting their vision and eye health throughout life. Academy members are committed to responding compassionately to their patients' individual needs and to advancing the highest standards of comprehensive eye care.

American Foundation for the Blind
11 Penn Plaza, Suite 300
New York, NY 10001
Tel: (212) 502-7600
(800) 232-5463
E-mail: afbinfo@afb.net
Website: www.afb.org

The mission of the American Foundation for the Blind (AFB) is to enable people who are blind or have visual impairment to achieve equality of access and opportunity that will ensure freedom of choice in their life. The AFB identifies critical issues related to the education and rehabilitation of people who are blind or have visual impairment and provides strategic solutions to address national concerns. Their national programs span the areas of aging, education, employment, specialized services, access, and technology.

American Optometric Association
243 N. Lindbergh Boulevard
St. Louis, MO 63141
Tel: (314) 991-4100
Website: www.aoa.org

The American Optometric Association (AOA) seeks to advance the availability and accessibility of quality eye, vision, and related health care; to represent the profession of optometry; to enhance and promote the independent and ethical decisionmaking of its members; and to assist doctors of optometry in practicing successfully in accordance with the highest standards of patient care. The AOA supports year-round programming to educate Americans about their vision and eye health and encourages people to take steps to preserve and protect their vision. The AOA represents more than 33,000 doctors of optometry trained in eye disease diagnosis and treatment, including dilated eye examinations.

Council of Citizens with Low Vision International
Tel: (800) 733-2258

The Council of Citizens with Low Vision International (CCLVI) is a nonprofit, all-volunteer network that addresses the needs of people with partial eyesight and is affiliated with the American Council of the Blind. The mission of the CCLVI is to establish the right of people with low vision to make full use of their vision through all necessary aids, services, and technology; to provide a means through which people with low vision can express their individual needs, interests, and preferences; to educate the public, professionals, and people with low vision; to establish outreach programs to ensure that everyone with low vision has access to necessary services; to promote needed research to prevent blindness and improve maximum use of sight; and to support the development of pre-service and in-service professional training programs to expand comprehensive low vision services throughout the country.

National Association for Visually Handicapped
22 W. 21st Street, 6th Floor
New York, NY 10010
Tel: (212) 889-3141
Website: www.navh.org

The National Association for Visually Handicapped (NAVH) is the only voluntary national health agency serving solely the “hard of seeing,” not the totally blind. It maintains a large-print, free-by-mail loan library of more than 8,500 titles. NAVH also provides visual aids, individual and group emotional support, educational outreach to the public and to professionals in the low vision field, and referrals.